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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,194	03/11/2004	Satoshi Ohkawa	249625US2DIV	4727

22850 7590 11/30/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
CARTER, TIA A	

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/797,194	OHKAWA, SATOSHI	
	Examiner	Art Unit	
	Tia A Carter	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7, 9-15, 17-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-15 and 17-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/492,116.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/11/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/11/04 have been fully considered but they are not persuasive. The applicant cites on page 12 that Matsubayashi does not teach an image signal conversion wherein the input color image signal is converted into a plane, or to convert an image signal expressed on a color space to an image signal on a plane. Examiner disagrees with applicant, the prior art Matsubayashi does not explicitly disclose "plane" in the disclosure however the Image processing apparatus performs color enhancement and adjustment based on the input image signal provided via computer whereas performing color conversion on the input signal to be output through a display (lcd) or printer. It is well known that in these color space environments the specific color assigned points as in fig. 5 are based upon planes (x-y-z) and the geometrical structure of the output device environment.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-2, 5-6, 10-11, 14, 17, 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsubayashi (US. 6459419).

Regarding claim [1], Matsubayashi discloses a color image processing apparatus (Fig. 1, col. 5, lines 3-5) comprising:

a plane signal conversion unit (plane conversion table-110) which generates a plane signal by converting a color space expressed by an input color image signal to a plane (Fig. 6, col. 9, lines 15-27);

a chroma identification unit (saturation calculation unit 103) which identifies a chroma of the color image signal based on the plane signal generated by said plane signal conversion unit and generates a chroma identification signal (Fig. 6, col. 9, lines 30-36;Fig. 7, col. 9, lines 47-59);

a hue area identification unit (hue calculation unit-105) which identifies a hue area in the color image signal based on the plane signal generated by said plane signal

conversion unit and generates a hue area identification signal (Fig. 6, col. 9, lines 30-36; Fig. 7, col. 9, lines 47-55 and lines 65-67), and

a color conversion unit (color conversion unit - 45) which executes color conversion or the color image signal based on the chroma identification signal generated by said chroma identification signal and the hue area identification signal generated by said hue area identification unit (fig. 9, col. 10, lines 23-28).

Regarding claim [2], Matsubayashi discloses the color image processing apparatus (Fig. 1, col. 5, lines 3-5) according to claim 1 further comprising a color conversion instruction unit (input control unit 42) which instructs conversion of a color specified by an operator (User) to an another color also specified by the operator,

wherein said color conversion unit executes color conversion of the color image signal based on the color instructed by said color conversion instruction unit (Fig.1, col. 5, lines 8-11; fig. 3, col. 6, lines 55-67).

Regarding claim [5], Matsubayashi discloses an image processing apparatus (Fig. 1, col. 5, lines 3-5) comprising:

a plane signal conversion unit (plane conversion table –110) which converts an image signal expressed on a color space to an image signal on a plane (fig. 15, col. 11, lines 26-30);

a chroma identification unit (saturation calculation unit 103) which identifies a chroma of the image signal based on the image signal converted by said plane signal conversion unit (Fig. 15, col. 11, lines 30-37 and lines 49-53);

a hue area identification unit (hue calculation unit 105) which identifies a hue of the image signal based on the image signal converted by said plane signal conversion unit (Fig. 15, col. 11, lines 30-33 and lines 44-47); and

a color conversion unit (color conversion unit-45) which executes color conversion of the image signal expressed on the color space based on a signal input from said chroma identification unit and a signal input from said hue area identification unit (Fig. 15, col. 11, lines 6-15).

Regarding claim [6], Matsubayashi discloses the image signal processing apparatus according to claim 5 further comprising an operation unit (keyboard 11, the mouse 12 or the pen 13)) which makes it possible for an operator to input an instruction for converting a color in an image signal expressed on the color space to an another color (fig. 1, col. 5, lines 8-11; col. 6, lines 58-67).

Regarding claim [10], Matsubayashi discloses a color image processing method (see fig. 6) comprising:

A plane signal conversion (color conversion table –110) step at which a plane signal is generated by converting a color space expressed by an input color image signal to a plane (Fig. 6, col. 9, lines 15-27);

A chroma identification (saturation calculation unit 103) step at which a chroma identification signal is generated by identifying a chroma of the color image signal based on the plane signal generated at the plane signal conversion step (Fig. 6, col. 9, lines 30-36;Fig. 7, col. 9, lines 47-59);

a hue area identification (hue calculation unit-105) step at which a hue area is identified in the color image signal based on the plane signal generated at the plane signal conversion step and a hue area identification signal is generated (Fig. 6, col. 9, lines 30-36; Fig. 7, col. 9, lines 47-55 and lines 65-67); and

a color conversion (color conversion unit - 45) step at which color conversion of the color image signal is executed based on the chroma identification signal generated at the chroma identification step and the hue area identification signal generated at the hue area identification step (fig. 9, col. 10, lines 23-28).

Regarding claim [11], Matsubayashi discloses the color image processing method according to claim 10 further comprising a color conversion instruction (input control unit 42) step at which color conversion from a color specified by an operator to another color also specified by the operator is instructed,

wherein color conversion of the color image signal is executed based on the color instructed at the color conversion step (Fig.1, col. 5, lines 8-11; fig. 3, col. 6, lines 55-67).

Regarding claim [14], Matsubayashi discloses an image processing method (see fig. 15) comprising:

a plane signal conversion step at which an image signal expressed on a color space is converted to an image signal on a plane (Fig. 6, col. 9, lines 15-27; fig. 15, col. 11, lines 26-30);

a chroma identification step at which a chroma of the image signal is identified based on the image signal converted at the plane signal conversion step (Fig. 15, col. 11, lines 30-37 and lines 49-53) ;

a hue area identification step at which a hue of the image signal is identified based on the image signal converted at the plane signal conversion step (Fig. 15, col. 11, lines 30-33 and lines 44-47); and

a color conversion step at which color conversion of the image signal expressed on the color space is executed based on the signal identified at the chroma identification step and the signal identified at the hue area identification step (Fig. 15, col. 11, lines 6-15).

Regarding claim [17], Matsubayashi discloses a computer-readable recording medium in which a program for making a computer execute a color image processing method is recorded (fig. 1, col. 5, lines 16-20), said method comprising the steps of:

a plane signal conversion at which a plane signal is generated by converting a color space expressed by an input color image signal to a plane (Fig. 6, col. 9, lines 15-27);

a chroma identification at which a chroma identification signal is generated by identifying a chroma of the color image signal based on the plane signal generated at the plane signal conversion step (Fig. 6, col. 9, lines 30-36;Fig. 7, col. 9, lines 47-59);

a hue area identification at which a hue area is identified in the color image signal based on the plane signal generated at the plane signal conversion step and a hue area identification signal is generated (Fig. 6, col. 9, lines 30-36; Fig. 7, col. 9, lines 47-55 and lines 65-67); and

a color conversion at which color conversion of the color image signal is executed based on the chroma identification signal generated at the chroma identification step and the hue area identification signal generated at the hue area identification step (fig. 9, col. 10, lines 23-28).

Regarding claim [18], Matsubayashi discloses a computer-readable recording medium in which a program for making a computer execute an image processing method is recorded (fig. 1, col. 5, lines 16-20), said method comprising the steps of:

a plane signal conversion at which an image signal expressed on a color space is converted to an image signal on a plane (Fig. 6, col. 9, lines 15-27; fig. 15, col. 11, lines 26-30);

a chroma identification at which a chroma of the image signal is identified based on the image signal converted at the plane signal conversion step (Fig. 15, col. 11, lines 30-37 and lines 49-53);

a hue area identification at which a hue of the image signal is identified based on the image signal converted at the plane signal conversion step (Fig. 15, col. 11, lines 30-33 and lines 44-47); and

a color conversion at which color conversion of the image signal expressed on the color space is executed based on the signal identified at the chroma identification step and the signal identified at the hue area identification step (Fig. 15, col. 11, lines 6-15).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3-4, 7, 9, 12-13,15 and 19are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsubayashi (US. 6459419) in view of Kanno et al. (US. 6434266).

Regarding claim [3], Matsubayashi discloses the color image processing apparatus according to claim 1 further comprising:

Matsubayashi **fails to discloses** a masking coefficient computing unit which computes masking coefficients for a plurality of hue areas; and

Matsubayashi **fails to discloses** a masking coefficient selection unit which selects a masking coefficient from those computed by said masking coefficient computing unit based on the chroma identification signal generated by said chroma

identification unit and the hue area identification signal generated by said hue area identification unit,

Matsubayashi **fails to discloses** wherein said color conversion unit executes color conversion of the color image signal using the masking coefficient selected by said masking coefficient selection a unit.

Kanno et al. **disclose** a masking coefficient computing unit which computes masking coefficients for a plurality of hue areas (fig. 7, col. 9, lines 1-13 and col. 10, lines 27-48); and

Kanno et al. **disclose** a masking coefficient selection unit which selects a masking coefficient from those computed by said masking coefficient computing unit (masking circuit-103) based on the chroma identification signal generated by said chroma identification unit and the hue area identification signal generated by said hue area identification unit (fig. 1, col. 5, lines 41-65),

Kanno et al. **disclose** wherein said color conversion unit executes color conversion of the color image signal using the masking coefficient selected by said masking coefficient selection unit (fig. 1, col. 5, lines 41-46).

It would have been obvious to one skilled in the art at the time of the invention to modify Matsubayashi wherein a masking unit and method are implemented whereas output colors would be further enhanced or adjusted to users choice or device specification which is disclosed in the digital color copying machine of Kanno et al. (US. 6434266) to achieve optimal image output.

Regarding claim [4], Matsubayashi discloses the color image processing apparatus according to claim 3.

Matsubayashi **fails to disclose** wherein said hue area selection unit selects a hue area in the color image signal based on the color instructed by said color conversion instruction unit.

Kanno et al. **disclose** hue area selection unit selects a hue area in the color image signal based on the color instructed by said color conversion instruction unit (fig. 7, col. 9, lines 1-9).

It would have been obvious to one skilled in the art at the time of the invention to modify Matsubayashi wherein a masking unit and method are implemented whereas output colors which is based upon the Hue value would be further enhanced or adjusted to users choice or device specification wherein the Hue value represents the actual color accumulated which is disclosed in the digital color copying machine of Kanno et al. (US. 6434266) to achieve optimal image output.

Regarding claim [7], Matsubayashi discloses an image processing apparatus comprising:

a plane signal conversion unit which converts an image signal expressed on a color space to an image signal on a plane (Fig. 6, col. 9, lines 15-27; fig. 15, col. 11, lines 26-30);

a chroma identification unit which identifies a chroma of the image signal based on the image signal converted by said plane signal conversion unit (Fig. 15, col. 11, lines 30-37 and lines 49-53);

a hue area identification unit which identifies a hue of the image signal based on the image signal converted by said plane signal conversion unit (Fig. 15, col. 11, lines 6-15);

Matsubayashi **fails to disclose** a masking coefficient selection unit which selects an optimal masking coefficient for the image signal based on a signal input from said chroma identification unit and a signal input from said hue area identification unit; and

Matsubayashi **fails to disclose** a color conversion unit which executes color conversion of the image signal expressed on the color space based on a result of selection by said masking coefficient selection unit.

Kanno et al. **discloses** a masking coefficient selection unit which selects an optimal masking coefficient for the image signal based on a signal input from said chroma identification unit and a signal input from said hue area identification unit (fig. 1, col. 5, lines 41-65); and

Kanno et al. **discloses** a color conversion unit which executes color conversion of the image signal expressed on the color space based on a result of selection by said masking coefficient selection unit (fig. 1, col. 5, lines 41-46).

It would have been obvious to one skilled in the art at the time of the invention to modify Matsubayashi wherein a masking unit and method are implemented whereas output colors would be further enhanced or adjusted to users choice or device

specification which is disclosed in the digital color copying machine of Kanno et al. (US. 6434266) to achieve optimal image output..

Regarding claim [9], Matsubayashi discloses the image signal processing apparatus according to claim 7 further comprising an operation unit (keyboard 11, the mouse 12 or the pen 13) which makes it possible for an operator to input an instruction for converting a color in an image signal expressed on the color space to an another color (fig. 1, col. 5, lines 8-11; col. 6, lines 58-67).

Regarding claim [12], Matsubayashi discloses the color image processing method according to claim 10 further comprising:

Matsubayashi **fails to disclose** a masking coefficient computing step at which masking coefficients for a plurality of hue areas are computed; and

Matsubayashi **fails to disclose** a masking coefficient selection step at which a masking coefficient is selected from those computed at the masking coefficient computing step based on the chroma identification signal generated at the chroma identification step and the hue area identification signal generated at the hue area identification step,

Matsubayashi **fails to disclose** wherein color conversion of the color image signal is executed at the color conversion step using the masking coefficient selected at the masking coefficient selection step.

Kanno et al. **discloses** a masking coefficient computing step at which masking coefficients for a plurality of hue areas are computed (fig. 7, col. 9, lines 1-13 and col. 10, lines 27-48); and

Kanno et al. **discloses** a masking coefficient selection step at which a masking coefficient is selected from those computed at the masking coefficient computing step based on the chroma identification signal generated at the chroma identification step and the hue area identification signal generated at the hue area identification step (fig. 1, col. 5, lines 41-65),

Kanno et al. **discloses** wherein color conversion of the color image signal is executed at the color conversion step using the masking coefficient selected at the masking coefficient selection step (fig. 1, col. 5, lines 41-46).

It would have been obvious to one skilled in the art at the time of the invention to modify Matsubayashi wherein a masking unit and method are implemented whereas output colors would be further enhanced or adjusted to users choice or device specification which is disclosed in the digital color copying machine of Kanno et al. (US. 6434266) to achieve optimal image output.

Regarding claim [13], Matsubayashi discloses The color image processing method according to claim 12, wherein a hue area in the color image signal is selected at the hue area selection step based on the color instructed at the color conversion instruction step (see fig. 21, col. 14, lines 47-55).

Regarding claim [15], Matsubayashi discloses an image processing method comprising:

a plane signal conversion step at which an image signal expressed on a color space is converted to an image signal on a plane (Fig. 6, col. 9, lines 15-27; fig. 15, col. 11, lines 26-30);

a chroma identification step at which a chroma of the image signal is identified based on the image signal converted at the plane signal conversion step (Fig. 15, col. 11, lines 30-37 and lines 49-53);

a hue area identification step at which a hue of the image signal is identified based on the image signal converted at the plane signal conversion step (Fig. 15, col. 11, lines 6-15);

Matsubayashi **fails to disclose** a masking coefficient selection step at which a masking coefficient optimal to an image based on the signal identified at the chroma identification step and a signal identified at the hue area identification step; and

Matsubayshi **fails to disclose** a color conversion step at which color conversion of the image signal expressed on the color space is executed based on the result of selection at the masking coefficient selection step.

Kanno et al. **discloses** a masking coefficient selection step at which a masking coefficient optimal to an image based on the signal identified at the chroma identification step and a signal identified at the hue area identification step (fig. 1, col. 5, lines 41-65); and

Kanno et al. **discloses** a color conversion step at which color conversion of the image signal expressed on the color space is executed based on the result of selection at the masking coefficient selection step (fig. 1, col. 5, lines 41-46).

It would have been obvious to one skilled in the art at the time of the invention to modify Matsubayashi wherein a masking unit and method are implemented whereas output colors would be further enhanced or adjusted to users choice or device specification which is disclosed in the digital color copying machine of Kanno et al. (US. 6434266) to achieve optimal image output.

Regarding claim [19], Matsubayashi discloses a color image processing apparatus (Fig. 1, col. 5, lines 3-5) comprising:

a plane signal conversion unit (plane conversion table-110) which generates a plane signal by converting a color space expressed by an input color image signal to a plane (Fig. 6, col. 9, lines 15-27);

a chroma identification unit (saturation calculation unit 103) which identifies a chroma of the color image signal based on the plane signal generated by said plane signal conversion unit and generates a chroma identification signal (Fig. 6, col. 9, lines 30-36;Fig. 7, col. 9, lines 47-59);

a hue area identification unit (hue calculation unit-105) which identifies a hue area in the color image signal based on the plane signal generated by said plane signal conversion unit and generates a hue area identification signal (Fig. 6, col. 9, lines 30-36; Fig. 7, col. 9, lines 47-55 and lines 65-67), and

a color conversion unit (color conversion unit - 45) which executes color conversion or the color image signal based on the chroma identification signal generated by said chroma identification signal and the hue area identification signal generated by said hue area identification unit (fig. 9, col. 10, lines 23-28).

Matsubayashi **fails to disclose** a masking coefficient computing unit which computes masking coefficients for a plurality of hue areas; and

Matsubayashi **fails to disclose** a masking coefficient selection unit which selects a masking coefficient from those computed by said masking coefficient computing unit based on the chroma identification signal generated by said chroma identification unit and the hue area identification signal generated by said hue area identification unit,

Matsubayashi **fails to disclose** wherein said color conversion unit executes color conversion of the color image signal using the masking coefficient selected by said masking coefficient selection unit.

Kanno et al. **discloses** a masking coefficient computing unit which computes masking coefficients for a plurality of hue areas (fig. 7, col. 9, lines 1-13 and col. 10, lines 27-48); and

Kanno et al. **discloses** a masking coefficient selection unit which selects a masking coefficient from those computed by said masking coefficient computing unit based on the chroma identification signal generated by said chroma identification unit and the hue area identification signal generated by said hue area identification unit (fig. 1, col. 5, lines 41-65),

Kanno et al. **discloses** wherein said color conversion unit executes color conversion of the color image signal using the masking coefficient selected by said masking coefficient selection unit (fig. 1, col. 5, lines 41-46).

It would have been obvious to one skilled in the art at the time of the invention to modify Matsubayashi wherein a masking unit and method are implemented whereas output colors would be further enhanced or adjusted to users choice or device specification which is disclosed in the digital color copying machine of Kanno et al. (US. 6434266) to achieve optimal image output.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miyashita et al. (US. 6031543), Kita et al. (US. 5729360), Hiratsuka et al. (US. 6108441), Rai et al. (US. 6337692), Prater (US. 5867169), Shiota et al. (US. 4535413), Fujimoto et al. (US. 5930385), Garber (US. 6236750), and Suzuki et al. (US. 5768403) are cited to show related art with respect to color value adjustments and enhancements for an accurate image data output.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tia A Carter whose telephone number is 703 - 306-5433. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on 703-305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tia A Carter
Examiner
Art Unit 2626

TAC
11/11/04

KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER